

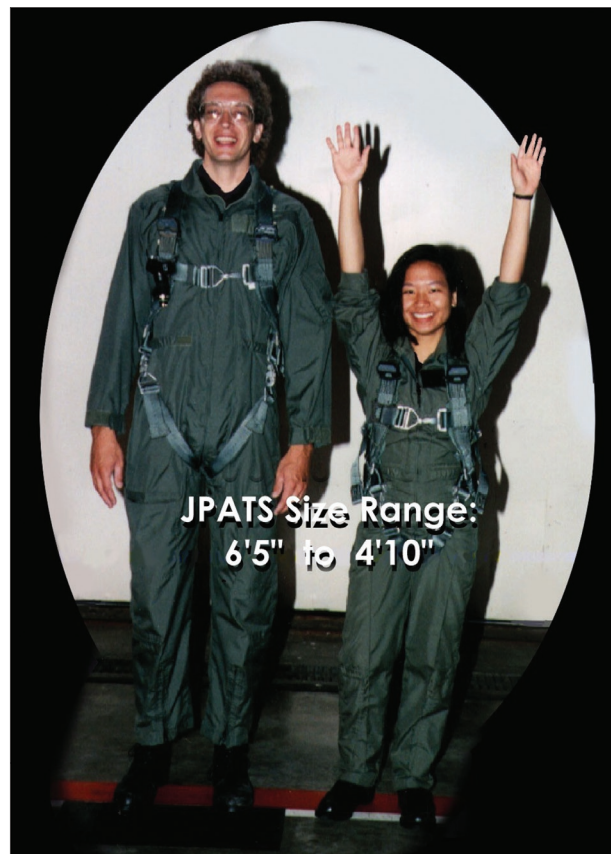


Air Force Research Laboratory|AFRL

Science and Technology for Tomorrow's Air and Space Force

Success Story

COCKPIT ACCOMMODATION RESEARCH CHANGES USAF PILOT ASSIGNMENT POLICY



The United States Air Force (USAF) utilized data from all USAF aircraft to assign pilot candidates of extreme body size to particular aircraft. This process avoids potential safety problems associated with aircraft/body size accommodation mismatches and expands flight opportunities for candidates who might otherwise have limited opportunities.



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Accomplishment

The Human Effectiveness Directorate measured approximately 30 test subjects of extreme body size in 24 USAF aircraft types to determine each aircraft's accommodation levels. Directorate researchers used these survey results, along with extensive anthropometric measures on all subjects, to predict the ability of people of extreme size to accomplish performance requirements as established by each USAF command.

The prediction equations developed from this research are quite good—accommodation levels in most high-performance aircraft are very close to original design specifications, people outside current entrance requirements for size should not be assigned to these aircraft, and some heavy aircraft can accommodate pilots of extreme size. The USAF Surgeon General's (SG) office uses these results to match pilot candidates of extreme size with specific classes or tracks of aircraft defined by their accommodation limits.

Background

Air Force medical standards (AFI-48-123) require USAF pilot candidates to be between 64 and 77 inches in stature and 34 and 40 inches in sitting height. Directorate researchers use this population to set design parameters for most USAF aircraft cockpit layouts.

However, in the mid 1990s, the Joint Primary Aircraft Training System program set body size design limits for the T-6 at 58 through 77 inches for stature and 31 to 40 inches for sitting height. Initially, the USAF considered relaxing entrance requirements to make flight training more accessible to both larger and smaller candidates.

The directorate was involved in developing cockpit design and evaluation methods for many years, typically working with program offices on specific platform requirements and testing. The current study applied those techniques to an evaluation of all USAF fleet aircraft with the goal of setting new pilot selection criteria.

The directorate briefed the results to the Chief of Staff of the Air Force, the commander of the Air Force Materiel Command, the commander of the Air Education and Training Command, USAF/SG, and CORONA. The directorate also presented the results at several conferences and published those results as a USAF technical report.

Additional information

To receive more information about this or other activities in the Air Force Research Laboratory, contact TECH CONNECT, AFRL/XPTC, (800) 203-6451 and you will be directed to the appropriate laboratory expert. (03-HE-14)